

Hubert Wheeler State School

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AUG 23 1994

MISSOURI DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF ENVIRONMENTAL QUALITY  
ENVIRONMENTAL SERVICES PROGRAM

Site: Hubert Wheeler  
ID #: 100000093446  
Break: 13  
Other: 7-7-94

Site Inspection Sampling Report  
Hubert Wheeler State School Site  
5707 Wilson Avenue  
St. Louis, Missouri  
July 7, 1994

HAZARDOUS WASTE PROGRAM  
MISSOURI DEPARTMENT OF  
NATURAL RESOURCES

#### INTRODUCTION

As authorized under the federal CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act), the MDNR (Missouri Department of Natural Resources), HWP (Hazardous Waste Program) requested the MDNR, ESP (Environmental Services Program) to conduct sampling as part of an SI (Site Inspection) currently underway. On July 7, 1994, ESP Environmental Specialist Brian Allen collected surface soil grabs at the Hubert Wheeler State School site. Information learned from sampling and field observations will be used to assist the HWP score the site's potential as a hazardous waste site under the CERCLA Hazard Ranking System. HWP Investigator Al Wallen was present for a portion of the sampling. Sam Brenneke and Don Dierdorf of Geotechnology, Incorporated, consultants for the Missouri DESE (Department of Elementary and Secondary Education), were on-site conducting a site investigation on this date.

The site is located in the City of St. Louis, southeast of the intersection of I-44 and Hampton Avenue. The site can be entered by following Hampton Avenue south to Wilson Avenue, then east on Wilson Avenue. The site is located on the north side of the street.

#### SITE DESCRIPTION AND HISTORY

The Hubert Wheeler State School serves severely developmentally disabled students. During recent years, a black tar-like material has occasionally oozed from the ground surface in the courtyard area at the northwest corner of the school property. The school placed asphalt paving over the courtyard area to minimize problems associated with the tar-like material. The oozing continues to surface in several areas, though most pronounced in an area where a concrete sidewalk abuts the asphalted area (now a playground). School maintenance personnel reported the black material to be "flowing" during excavation for the concrete walkway at a depth of three feet. At least one drum was also discovered during the walkway excavation.

Historical operations at the site include use as a storage area by a coke and foundry supply as well as being the location of a fire brick manufacturing company. Reports have also been relayed that the school may be built upon demolition fill from area construction activities and possibly from demolition of buildings once used on-site. The City of St. Louis may have also used the site as a landfill in the past.

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The DESE hired a consultant to conduct a subsurface assessment of the asphalt playground. Sampling conducted by the consultant has shown a significant lead level in the on-site soils and several volatile and semi-volatile organics (typical of coal-tar contamination). Geotechnology conducted composite surface soil sampling on July 7, 1994, as part of its continuing investigation in an effort to delineate the areal extent of any contaminants which may be present at the surface. MDNR was present to conduct the SI sampling during planned investigation activities by the consultant to minimize disruption to the school.

METHODS

Soil grab samples were collected with either clean or field decontaminated stainless steel bucket augers. The soil was transferred to clean aluminum foil pans. The volatile organics portion of the sample was immediately placed into a sample container using clean stainless steel spoons. The remaining soil was homogenized prior to placement in sample containers.

A grab sample of the tar-like material exuding from the subsurface was collected using clean stainless steel spoons to transfer the material directly into a sample container.

Field decontamination of the stainless bucket augers was performed using a non-phosphate detergent solution with brushes, followed by a tap water rinse, a 10% nitric acid rinse, a deionized water rinse, a methanol rinse, a hexane rinse, and a final deionized water rinse. Equipment was allowed to air dry on plastic before being utilized again.

Following is a listing of samples collected, by sample number, indicating the location, date, and time collected.

<u>Sample#</u>	<u>Description and Location of Sample</u>	<u>Date &amp; Time Collected</u>
94-1705	Soil grab (0-1 ft depth) from area 7 ft north of the concrete pad and 5 ft east of the east edge of asphalt play area.	7/7/94 @ 10:20
94-1706	Soil grab (0-1 ft depth) from area 7 ft north of the concrete pad and 5 ft east of the east edge of asphalt play area (duplicate).	7/7/94 @ 10:20
94-1707	Soil grab (0-1.5 ft depth) from area 35 ft north of the northwest fence post surrounding the asphalt play area.	7/7/94 @ 11:15
94-1708	Soil grab (0-2 ft depth) from area 9 ft west of the west edge of asphalt play area and the approximate midway point of the asphalt area's north-south line.	7/7/94 @ 12:45

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<u>Sample#</u>	<u>Description and Location of Sample</u>	<u>Date &amp; Time Collected</u>
94-1709	Soil grab (0-1 ft depth) from area 10 ft west and 35 ft south of the southeast corner of the building bordering the grass play area's north side.	7/7/94 @ 13:20
94-1710	Soil grab (0-1 ft depth) from area 20 ft north of the northeast corner of the school gym (background).	7/7/94 @ 13:40
94-1711	Grab of black tar-like material collected from the ground surface where it oozes from the sub-surface.	7/7/94 @ 14:18

Please refer to Appendix A for a map of the site indicating sampling locations.

Field personnel wore clean disposable latex gloves for each sample collected. All samples received a numbered tag and were placed on ice in a cooler. The corresponding tag number was entered onto a chain-of-custody form indicating the location, date and time of collection, and parameters to be analyzed. Custody of the samples was maintained by ESP field personnel until relinquishing them to laboratory personnel within the Environmental Services Program in Jefferson City for analyses. All samples were submitted for volatile organics, base neutrals and acid extractables, and total metals (As, Ba, Cd, Cr, Hg, Pb, Se, Ag) analyses. All analyses were conducted in accordance with the Fiscal Year 1994 Quality Assurance Project Plan for PA/SI sites in Missouri.

#### OBSERVATIONS

The weather during sampling was sunny and humid, and temperatures reached 95+ degrees at midday. Winds were from the south at 5-10 miles per hour.

ESP personnel attempted to auger to a depth of two feet, but the nature of the soil (rocks and brick debris) inhibited the collector from achieving two feet in several areas.

Over time, the tar-like material has migrated across the asphalt play area in several narrow paths. The apparent origin of the seep covers about 10 square feet and is located where the concrete pad abuts the asphalt play area.

Site Inspection Sampling Report  
Hubert Wheeler State School Site  
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Following is a breakdown of observations noted on each sample.

Sample # Observations and Sample Descriptions:

- 94-1705 Soil grab (0-1 ft depth) consisted of brown top soil interspersed with small gravel and brick debris. No odor was noted.
- 94-1706 Duplicate sample of 94-1705, same description as above.
- 94-1707 Soil grab (0-1.5 ft depth) consisted of brown top soil with small gravel and a slight amount of yellow clay interspersed. No odor was noted. This sample was collected in an area where Geotechnology had reported an anomaly during a magnetometer survey conducted two weeks previously.
- 94-1708 Soil grab (0-2 ft depth) consisted of brown top soil interspersed with a slight amount of small gravel and pliable brown clay. No odor was noted. This sample appeared to be collected in the same area as a soil boring was conducted during a previous investigation. There was evidence soil here had been disturbed in the past.
- 94-1709 Soil grab (0-1 ft depth) consisted of brown top soil interspersed with small gravel and yellowish-brown clay. No odor was noted.
- 94-1710 Soil grab (0-1 ft depth) consisted of brown top soil interspersed with small gravel, brick debris, and yellow-brown clay. No odor was noted.
- 94-1711 Grab of material exuding from the sub-surface was black and tar-like. The material had a petroleum odor and was semi-solid rubber-like consistency.

DATA REPORTING

Please refer to Appendix B for analytical results of samples collected.

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Hubert Wheeler State School Site  
July 7, 1994  
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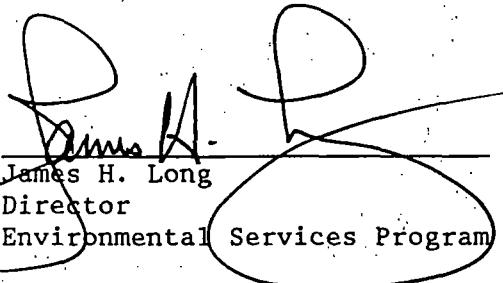
Submitted by:

  
\_\_\_\_\_  
Brian J. Allen  
Environmental Specialist  
Superfund Unit  
Environmental Services Program

Date:

8/23/94

Approved by:

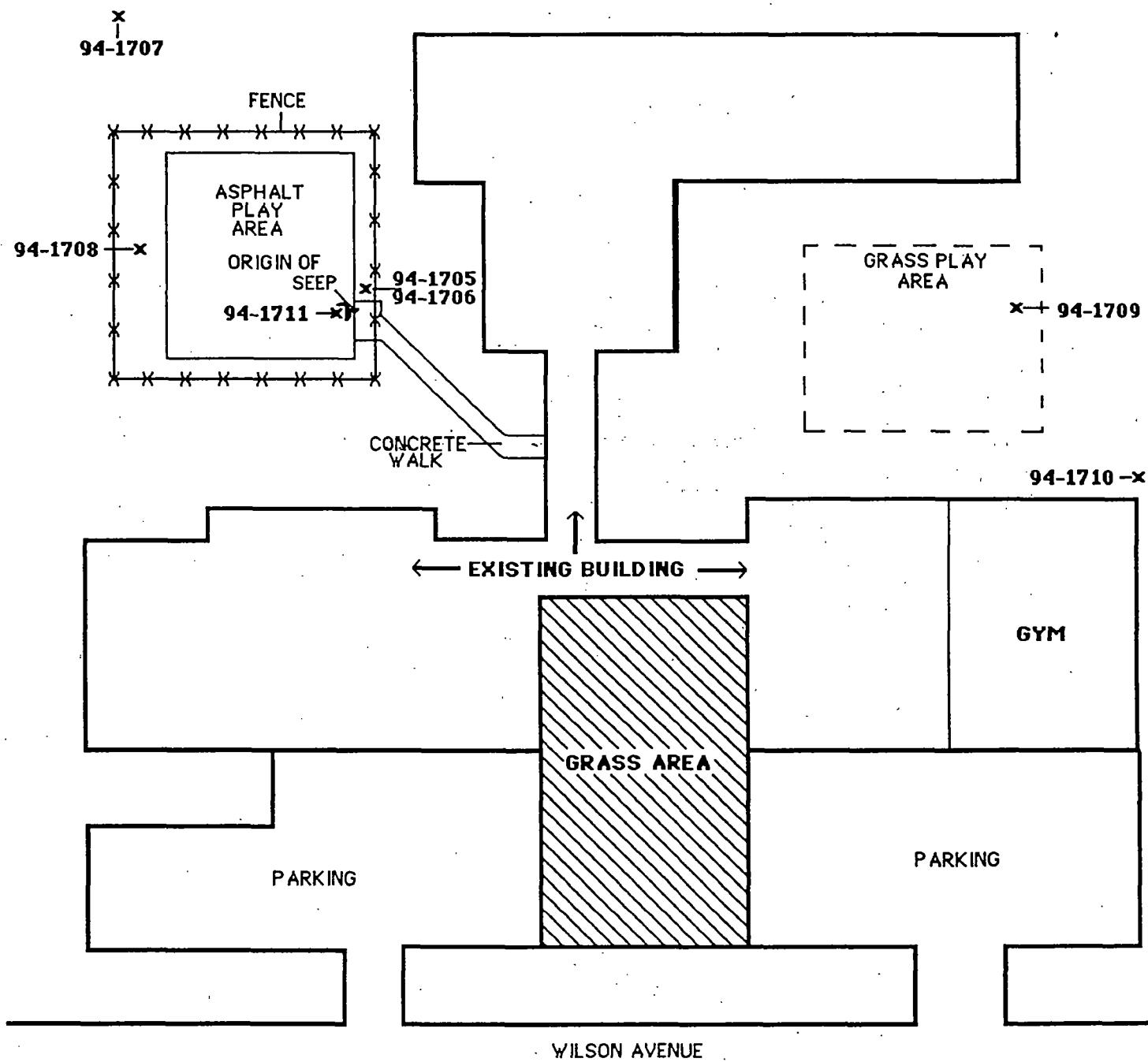
  
\_\_\_\_\_  
James H. Long  
Director  
Environmental Services Program

JHL:bad

c: Julie Bloss, Environmental Specialist, HWP  
Bob Eck, Regional Director, SLRO

**APPENDIX A**  
**Site Map**  
**Hubert Wheeler State School Site**

**APPENDIX A  
SITE MAP  
HUBERT WHEELER STATE SCHOOL**



**LEGEND:**

**X** SAMPLE COLLECTION POINT

**94-XXXX** SAMPLE COLLECTED AT LOCATION  
INDICATED

**N**  
NOT TO SCALE

**APPENDIX B**  
**Analytical Results**  
**Hubert Wheeler State School Site**

ENVIRONMENTAL SERVICES PROGRAM  
RESULT OF SAMPLE ANALYSIS

Sample No. 94-1705

Reported to: BRIAN ALLEN  
Affiliation: SPFD

Date: 8/23/94  
Project Code: 3658/3538

Sample Description:

HUBERT WHEELER STATE SCHOOL, ST. LOUIS CITY  
SOIL GRAB (0-1' DEPTH) FROM AREA 7' NORTH OF  
CONCRETE PAD & 5' EAST OF EASTERN ASPHALT EDGE

Collected by: BRIAN ALLEN  
Affiliation: SPFD  
Remarks: ADD TCLP

Date: 07/07/94

<u>PARAMETERS</u>	<u>RESULTS</u>
TOTAL SILVER	<2500 ug/Kg
TOTAL ARSENIC	11,000 ug/Kg
TOTAL BARIUM	77,800 ug/Kg
TOTAL CADMIUM	1220 ug/Kg
TOTAL CHROMIUM	12,200 ug/Kg
TOTAL MERCURY	123 ug/Kg
TOTAL LEAD	65,700 ug/Kg
TOTAL SELENIUM	586 ug/Kg
VOA RESULT Chloromethane	< 25 ug/Kg

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Sample no. 94-1705  
Date 8/23/94

<u>PARAMETERS</u>	<u>RESULTS</u>
Vinyl Chloride	< 25 ug/Kg
Bromomethane	< 25 ug/Kg
Chloroethane	< 25 ug/Kg
1,1-Dichloroethene	< 25 ug/Kg
Acetone	<100 ug/Kg
Carbon Disulfide	< 25 ug/Kg
Methylene Chloride	< 25 ug/Kg
Methyl-tertiary-butyl Ether	< 25 ug/Kg
trans-1,2-Dichloroethene	< 25 ug/Kg
1,1-Dichloroethane	< 25 ug/Kg
2-Butanone	<100 ug/Kg
cis-1,2-Dichloroethene	< 25 ug/Kg
Chloroform	< 25 ug/Kg
1,1,1-Trichloroethane	< 25 ug/Kg
Carbon Tetrachloride	< 25 ug/Kg
Benzene	< 25 ug/Kg
1,2-Dichloroethane	< 25 ug/Kg
Trichloroethene	< 25 ug/Kg
1,2-Dichloropropane	< 25 ug/Kg
Bromodichloromethane	< 25 ug/Kg
2-Hexanone	<100 ug/Kg
trans-1,3-Dichloropropene	< 25 ug/Kg
Toluene	< 25 ug/Kg
cis-1,3-Dichloropropene	< 25 ug/Kg
1,1,2-Trichloroethane	< 25 ug/Kg
4-Methyl-2-Pentanone	<100 ug/Kg
Tetrachloroethene	< 25 ug/Kg
Dibromochloromethane	< 25 ug/Kg
Chlorobenzene	< 25 ug/Kg
Ethylbenzene	< 25 ug/Kg

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Sample no. 94-1705  
Date 8/23/94

PARAMETERS                           RESULTS

Total Xylenes	< 25	ug/Kg
Styrene	< 25	ug/Kg
Bromoform	< 25	ug/Kg
1,1,2,2-Tetrachloroethane	< 25	ug/Kg
1,3-Dichlorobenzene	< 25	ug/Kg
1,4-Dichlorobenzene	< 25	ug/Kg
1,2-Dichlorobenzene	< 25	ug/Kg

COMMENTS: Analyzed by GC/MS at the Missouri DNR Environmental Services Program laboratory.

ACID EXTRACTABLES

Phenol	<	2.5	mg/Kg
2-Chlorophenol	<	2.5	mg/Kg
2-Methylphenol	<	2.5	mg/Kg
4-Methylphenol	<	2.5	mg/Kg
2-Nitrophenol	<	2.5	mg/Kg
2,4-Dimethylphenol	<	2.5	mg/Kg
2,4-Dichlorophenol	<	2.5	mg/Kg
4-Chloro-3-methylphenol	<	2.5	mg/Kg
2,4,6-Trichlorophenol	<	2.5	mg/Kg
2,4,5-Trichlorophenol	<	7.5	mg/Kg
2,4-Dinitrophenol	<	7.5	mg/Kg
4-Nitrophenol	<	7.5	mg/Kg
2-Methyl-4,6-dinitrophenol	<	7.5	mg/Kg
Pentachlorophenol	<	7.5	mg/Kg

COMMENTS: Analyzed by GC/MS at Missouri Department of Natural Resources' Laboratory.

(1) Elevated quantitation limits due to matrix interferences.

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Sample no. 94-1705  
Date 8/23/94

<u>PARAMETERS</u>	<u>RESULTS</u>
<b>BASE NEUTRAL EXTRACTABLES</b>	
Acenaphthene	< 2.5 mg/Kg
Acenaphthylene	< 2.5 mg/Kg
Anthracene	< 2.5 mg/Kg
Benzo(a)anthracene	2.7 mg/Kg
Benzo(a)pyrene	< 2.5 mg/Kg
Benzo(b)fluoranthene	< 2.5 mg/Kg
Benzo(ghi)perylene	< 2.5 mg/Kg
Benzoic acid	Not Analyzed
Benzo(k)fluoranthene	< 2.5 mg/Kg
Benzyl alcohol	< 2.5 mg/Kg
Bis(2-chloroethoxy)methane	< 2.5 mg/Kg
Bis(2-chloroethyl)ether	< 2.5 mg/Kg
Bis(2-chloroisopropyl)ether	< 2.5 mg/Kg
Bis(2-ethylhexyl)phthalate	Not Analyzed
4-Bromophenyl phenyl ether	< 2.5 mg/Kg
Butyl benzyl phthalate	< 2.5 mg/Kg
4-Chloroaniline	< 7.5 mg/Kg
2-Chloronaphthalene	< 2.5 mg/Kg
4-Chlorophenyl phenyl ether	< 2.5 mg/Kg
Chrysene	4.4 mg/Kg
Dibenzo(a,h)anthracene	< 2.5 mg/Kg
Dibenzofuran	< 2.5 mg/Kg
1,2-Dichlorobenzene	< 2.5 mg/Kg
1,3-Dichlorobenzene	< 2.5 mg/Kg
1,4-Dichlorobenzene	< 2.5 mg/Kg
3,3-Dichlorobenzidine	< 7.5 mg/Kg
Diethylphthalate	< 2.5 mg/Kg
Dimethylphthalate	< 2.5 mg/Kg
Di-N-Butylphthalate	Not Analyzed

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Sample no. 94-1705  
Date 8/23/94

<u>PARAMETERS</u>	<u>RESULTS</u>
2,4-Dinitrotoluene	< 2.5 mg/Kg
2,6-Dinitrotoluene	< 2.5 mg/Kg
Di-n-octyl phthalate	< 2.5 mg/Kg
Fluoranthene	6.9 mg/Kg
Fluorene	< 2.5 mg/Kg
Hexachlorobenzene	< 2.5 mg/Kg
Hexachlorobutadiene	< 2.5 mg/Kg
Hexachlorocyclopentadiene	< 7.5 mg/Kg
Hexachloroethane	< 2.5 mg/Kg
Indeno(1,2,3-cd)pyrene	< 2.5 mg/Kg
Isophorone	< 2.5 mg/Kg
2-Methylnaphthalene	< 2.5 mg/Kg
Naphthalene	< 2.5 mg/Kg
2-Nitroaniline	< 7.5 mg/Kg
3-Nitroaniline	< 7.5 mg/Kg
4-Nitroaniline	< 7.5 mg/Kg
Nitrobenzene	< 2.5 mg/Kg
N-Nitrosodi-n-propylamine	< 2.5 mg/Kg
N-Nitrosodiphenylamine	< 2.5 mg/Kg
Phenanthrene	4.7 mg/Kg
Pyrene	7.0 mg/Kg
1,2,4-Trichlorobenzene	< 2.5 mg/Kg

COMMENTS: Analyzed by GC/MS at Missouri

Department of Natural Resources' Laboratory.

- (1) Elevated quantitation limits due to matrix interferences.

ENVIRONMENTAL SERVICES PROGRAM  
RESULT OF SAMPLE ANALYSIS

Sample No. 94-1706

Reported to: BRIAN ALLEN  
Affiliation: SPFD

Date: 8/23/94  
Project Code: 3658/3538

Sample Description:

HUBERT WHEELER STATE SCHOOL, ST. LOUIS CITY  
SOIL GRAB (0-1' DEPTH) FROM AREA 7' NORTH OF  
CONCRETE PAD & 5' EAST OF EASTERN ASPHALT EDGE, DUPLICATE

Collected by: BRIAN ALLEN  
Affiliation: SPFD  
Remarks: ADD TCLP

Date: 07/07/94

<u>PARAMETERS</u>	<u>RESULTS</u>
TOTAL SILVER	<2500 ug/Kg
TOTAL ARSENIC	1100 ug/Kg
TOTAL BARIUM	70,000 ug/Kg
TOTAL CADMIUM	545 ug/Kg
TOTAL CHROMIUM	10,700 ug/Kg
TOTAL MERCURY	149 ug/Kg
TOTAL LEAD	54,500 ug/Kg
TOTAL SELENIUM	<500 ug/Kg
VOA RESULT Chloromethane	< 25 ug/Kg

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Sample no. 94-1706  
Date 8/23/94

<u>PARAMETERS</u>	<u>RESULTS</u>
Vinyl Chloride	< 25 ug/Kg
Bromomethane	< 25 ug/Kg
Chloroethane	< 25 ug/Kg
1,1-Dichloroethene	< 25 ug/Kg
Acetone	<100 ug/Kg
Carbon Disulfide	< 25 ug/Kg
Methylene Chloride	< 25 ug/Kg
Methyl-tertiary-butyl Ether	< 25 ug/Kg
trans-1,2-Dichloroethene	< 25 ug/Kg
1,1-Dichloroethane	< 25 ug/Kg
2-Butanone	<100 ug/Kg
cis-1,2-Dichloroethene	< 25 ug/Kg
Chloroform	< 25 ug/Kg
1,1,1-Trichloroethane	< 25 ug/Kg
Carbon Tetrachloride	< 25 ug/Kg
Benzene	< 25 ug/Kg
1,2-Dichloroethane	< 25 ug/Kg
Trichloroethene	< 25 ug/Kg
1,2-Dichloropropane	< 25 ug/Kg
Bromodichloromethane	< 25 ug/Kg
2-Hexanone	<100 ug/Kg
trans-1,3-Dichloropropene	< 25 ug/Kg
Toluene	< 25 ug/Kg
cis-1,3-Dichloropropene	< 25 ug/Kg
1,1,2-Trichloroethane	< 25 ug/Kg
4-Methyl-2-Pentanone	<100 ug/Kg
Tetrachloroethene	< 25 ug/Kg
Dibromochloromethane	< 25 ug/Kg
Chlorobenzene	< 25 ug/Kg
Ethylbenzene	< 25 ug/Kg

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Sample no. 94-1706  
Date 8/23/94

<u>PARAMETERS</u>	<u>RESULTS</u>
Total Xylenes	< 25 ug/Kg
Styrene	< 25 ug/Kg
Bromoform	< 25 ug/Kg
1,1,2,2-Tetrachloroethane	< 25 ug/Kg
1,3-Dichlorobenzene	< 25 ug/Kg
1,4-Dichlorobenzene	< 25 ug/Kg
1,2-Dichlorobenzene	< 25 ug/Kg

COMMENTS: Analyzed by GC/MS at the Missouri DNR Environmental Services Program laboratory.

ACID EXTRACTABLES

Phenol	< 0.25 mg/Kg
2-Chlorophenol	< 0.25 mg/Kg
2-Methylphenol	< 0.25 mg/Kg
4-Methylphenol	< 0.25 mg/Kg
2-Nitrophenol	< 0.25 mg/Kg
2,4-Dimethylphenol	< 0.25 mg/Kg
2,4-Dichlorophenol	< 0.25 mg/Kg
4-Chloro-3-methylphenol	< 0.25 mg/Kg
2,4,6-Trichlorophenol	< 0.25 mg/Kg
2,4,5-Trichlorophenol	< 1.25 mg/Kg
2,4-Dinitrophenol	< 1.25 mg/Kg
4-Nitrophenol	< 1.25 mg/Kg
2-Methyl-4,6-dinitrophenol	< 1.25 mg/Kg
Pentachlorophenol	< 1.25 mg/Kg

COMMENTS: Analyzed by GC/MS at Missouri Department of Natural Resources' Laboratory.

BASE NEUTRAL EXTRACTABLES

Acenaphthene 0.43 mg/Kg

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Sample no. 94-1706  
Date 8/23/94

PARAMETERS

Acenaphthylene  
Anthracene  
Benzo(a)anthracene  
Benzo(a)pyrene  
Benzo(b)fluoranthene  
Benzo(ghi)perylene  
Benzoic acid  
Benzo(k)fluoranthene  
Benzyl alcohol  
Bis(2-chloroethoxy)methane  
Bis(2-chloroethyl)ether  
Bis(2-chloroisopropyl)ether  
Bis(2-ethylhexyl)phthalate  
4-Bromophenyl phenyl ether  
Butyl benzyl phthalate  
4-Chloroaniline  
2-Chloronaphthalene  
4-Chlorophenyl phenyl ether  
Chrysene  
Dibenzo(a,h)anthracene  
Dibenzofuran  
1,2-Dichlorobenzene  
1,3-Dichlorobenzene  
1,4-Dichlorobenzene  
3,3-Dichlorobenzidine  
Diethylphthalate  
Dimethylphthalate  
Di-N-Butylphthalate  
2,4-Dinitrotoluene  
2,6-Dinitrotoluene

RESULTS

< 0.25 mg/Kg  
1.5 mg/Kg  
3.5 mg/Kg  
< 0.25 mg/Kg  
3.0 mg/Kg  
< 0.25 mg/Kg  
Not Analyzed  
4.8 mg/Kg  
< 0.25 mg/Kg  
< 0.25 mg/Kg  
< 0.25 mg/Kg  
< 0.25 mg/Kg  
Not Analyzed  
< 0.25 mg/Kg  
< 0.25 mg/Kg  
< 1.25 mg/Kg  
< 0.25 mg/Kg  
< 0.25 mg/Kg  
4.0 mg/Kg  
< 0.25 mg/Kg  
< 1.25 mg/Kg  
0.26 mg/Kg  
< 0.25 mg/Kg  
Not Analyzed  
< 0.25 mg/Kg  
< 0.25 mg/Kg

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Sample no. 94-1706  
Date 8/23/94

<u>PARAMETERS</u>	<u>RESULTS</u>
Di-n-octyl phthalate	< 0.25 mg/Kg
Fluoranthene	9.3 mg/Kg
Fluorene	0.43 mg/Kg
Hexachlorobenzene	< 0.25 mg/Kg
Hexachlorobutadiene	≤ 0.25 mg/Kg
Hexachlorocyclopentadiene	< 1.25 mg/Kg
Hexachloroethane	< 0.25 mg/Kg
Indeno(1,2,3-cd)pyrene	1.4 mg/Kg
Isophorone	< 0.25 mg/Kg
2-Methylnaphthalene	< 0.25 mg/Kg
Naphthalene	< 0.25 mg/Kg
2-Nitroaniline	< 1.25 mg/Kg
3-Nitroaniline	< 1.25 mg/Kg
4-Nitroaniline	< 1.25 mg/Kg
Nitrobenzene	< 0.25 mg/Kg
N-Nitrosodi-n-propylamine	< 0.25 mg/Kg
N-Nitrosodiphenylamine	< 0.25 mg/Kg
Phenanthrene	4.8 mg/Kg
Pyrene	7.4 mg/Kg
1,2,4-Trichlorobenzene	< 0.25 mg/Kg

COMMENTS: Analyzed by GC/MS at Missouri  
Department of Natural Resources' Laboratory.

ENVIRONMENTAL SERVICES PROGRAM  
RESULT OF SAMPLE ANALYSIS

Sample No. 94-1707

Reported to: BRIAN ALLEN  
Affiliation: SPFD

Date: 8/23/94  
Project Code: 3658/3538

Sample Description:

HUBERT WHEELER STATE SCHOOL, ST. LOUIS CITY  
SOIL GRAB (0-18" DEPTH) FROM AREA 35' NORTH  
OF NW FENCE POST SURROUNDING ASPHALT PLAY AREA

Collected by: BRIAN ALLEN  
Affiliation: SPFD  
Remarks: ADD TCLP

Date: 07/07/94

<u>PARAMETERS</u>	<u>RESULTS</u>
TOTAL SILVER	<2500 ug/Kg
TOTAL ARSENIC	5190 ug/Kg
TOTAL BARIUM	108,000 ug/Kg
TOTAL CADMIUM	1240 ug/Kg
TOTAL CHROMIUM	15,800 ug/Kg
TOTAL MERCURY	<25 ug/Kg
TOTAL LEAD	60,000 ug/Kg
TOTAL SELENIUM	<500 ug/Kg
VOA RESULT Chloromethane	< 25 ug/Kg

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Sample no. 94-1707  
Date 8/23/94

<u>PARAMETERS</u>	<u>RESULTS</u>
Vinyl Chloride	< 25 ug/Kg
Bromomethane	< 25 ug/Kg
Chloroethane	< 25 ug/Kg
1,1-Dichloroethene	< 25 ug/Kg
Acetone	<100 ug/Kg
Carbon Disulfide	< 25 ug/Kg
Methylene Chloride	< 25 ug/Kg
Methyl-tertiary-butyl Ether	< 25 ug/Kg
trans-1,2-Dichloroethene	< 25 ug/Kg
1,1-Dichloroethane	< 25 ug/Kg
2-Butanone	<100 ug/Kg
cis-1,2-Dichloroethene	< 25 ug/Kg
Chloroform	< 25 ug/Kg
1,1,1-Trichloroethane	< 25 ug/Kg
Carbon Tetrachloride	< 25 ug/Kg
Benzene	< 25 ug/Kg
1,2-Dichloroethane	< 25 ug/Kg
Trichloroethene	< 25 ug/Kg
1,2-Dichloropropane	< 25 ug/Kg
Bromodichloromethane	< 25 ug/Kg
2-Hexanone	<100 ug/Kg
trans-1,3-Dichloropropene	< 25 ug/Kg
Toluene	< 25 ug/Kg
cis-1,3-Dichloropropene	< 25 ug/Kg
1,1,2-Trichloroethane	< 25 ug/Kg
4-Methyl-2-Pentanone	<100 ug/Kg
Tetrachloroethene	< 25 ug/Kg
Dibromochloromethane	< 25 ug/Kg
Chlorobenzene	< 25 ug/Kg
Ethylbenzene	< 25 ug/Kg

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<u>PARAMETERS</u>	<u>RESULTS</u>
Total Xylenes	< 25 ug/Kg
Styrene	< 25 ug/Kg
Bromoform	< 25 ug/Kg
1,1,2,2-Tetrachloroethane	< 25 ug/Kg
1,3-Dichlorobenzene	< 25 ug/Kg
1,4-Dichlorobenzene	< 25 ug/Kg
1,2-Dichlorobenzene	< 25 ug/Kg

COMMENTS: Analyzed by GC/MS at the Missouri DNR Environmental Services Program laboratory.

ACID EXTRACTABLES

Phenol	< 0.20	mg/Kg
2-Chlorophenol	< 0.20	mg/Kg
2-Methylphenol	< 0.20	mg/Kg
4-Methylphenol	< 0.20	mg/Kg
2-Nitrophenol	< 0.20	mg/Kg
2,4-Dimethylphenol	< 0.20	mg/Kg
2,4-Dichlorophenol	< 0.20	mg/Kg
4-Chloro-3-methylphenol	< 0.20	mg/Kg
2,4,6-Trichlorophenol	< 0.20	mg/Kg
2,4,5-Trichlorophenol	< 1.00	mg/Kg
2,4-Dinitrophenol	< 1.00	mg/Kg
4-Nitrophenol	< 1.00	mg/Kg
2-Methyl-4,6-dinitrophenol	< 1.00	mg/Kg
Pentachlorophenol	< 1.00	mg/Kg

COMMENTS: Analyzed by GC/MS at Missouri Department of Natural Resources' Laboratory.

BASE NEUTRAL EXTRACTABLES

Acenaphthene	< 0.20	mg/Kg
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<u>PARAMETERS</u>	<u>RESULTS</u>
Acenaphthylene	< 0.20 mg/Kg
Anthracene	0.22 mg/Kg
Benzo(a)anthracene	0.55 mg/Kg
Benzo(a)pyrene	< 0.20 mg/Kg
Benzo(b)fluoranthene	0.42 mg/Kg
Benzo(ghi)perylene	< 0.20 mg/Kg
Benzoic acid	Not Analyzed
Benzo(k)fluoranthene	0.83 mg/Kg
Benzyl alcohol	< 0.20 mg/Kg
Bis(2-chloroethoxy)methane	< 0.20 mg/Kg
Bis(2-chloroethyl)ether	< 0.20 mg/Kg
Bis(2-chloroisopropyl)ether	< 0.20 mg/Kg
Bis(2-ethylhexyl)phthalate	Not Analyzed
4-Bromophenyl phenyl ether	< 0.20 mg/Kg
Butyl benzyl phthalate	< 0.20 mg/Kg
4-Chloroaniline	< 1.00 mg/Kg
2-Chloronaphthalene	< 0.20 mg/Kg
4-Chlorophenyl phenyl ether	< 0.20 mg/Kg
Chrysene	0.76 mg/Kg
Dibenzo(a,h)anthracene	< 0.20 mg/Kg
Dibenzofuran	< 0.20 mg/Kg
1,2-Dichlorobenzene	< 0.20 mg/Kg
1,3-Dichlorobenzene	< 0.20 mg/Kg
1,4-Dichlorobenzene	< 0.20 mg/Kg
3,3-Dichlorobenzidine	< 1.00 mg/Kg
Diethylphthalate	< 0.20 mg/Kg
Dimethylphthalate	< 0.20 mg/Kg
Di-N-Butylphthalate	Not Analyzed
2,4-Dinitrotoluene	< 0.20 mg/Kg
2,6-Dinitrotoluene	< 0.20 mg/Kg

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<u>PARAMETERS</u>	<u>RESULTS</u>
Di-n-octyl phthalate	< 0.20 mg/Kg
Fluoranthene	1.4 mg/Kg
Fluorene	< 0.20 mg/Kg
Hexachlorobenzene	< 0.20 mg/Kg
Hexachlorobutadiene	< 0.20 mg/Kg
Hexachlorocyclopentadiene	< 1.00 mg/Kg
Hexachloroethane	< 0.20 mg/Kg
Indeno(1,2,3-cd)pyrene	< 0.20 mg/Kg
Isophorone	< 0.20 mg/Kg
2-Methylnaphthalene	< 0.20 mg/Kg
Naphthalene	< 0.20 mg/Kg
2-Nitroaniline	< 1.00 mg/Kg
3-Nitroaniline	< 1.00 mg/Kg
4-Nitroaniline	< 1.00 mg/Kg
Nitrobenzene	< 0.20 mg/Kg
N-Nitrosodi-n-propylamine	< 0.20 mg/Kg
N-Nitrosodiphenylamine	< 0.20 mg/Kg
Phenanthrene	0.67 mg/Kg
Pyrene	1.2 mg/Kg
1,2,4-Trichlorobenzene	< 0.20 mg/Kg

COMMENTS: Analyzed by GC/MS at Missouri  
Department of Natural Resources' Laboratory.

ENVIRONMENTAL SERVICES PROGRAM  
RESULT OF SAMPLE ANALYSIS

Sample No. 94-1708

Reported to: BRIAN ALLEN  
Affiliation: SPF D

Date: 8/23/94  
Project Code: 3658/3538

Sample Description:

HUBERT WHEELER STATE SCHOOL, ST. LOUIS CITY, SOIL GRAB  
(0-2' DEPTH) FROM AREA 9' WEST OF WESTERN ASPHALT EDGE &  
APPROX. MIDWAY POINT OF ASPHALTED AREA'S NORTH-SOUTH LINE

Collected by: BRIAN ALLEN  
Affiliation: SPF D  
Remarks: ADD TCLP

Date: 07/07/94

<u>PARAMETERS</u>	<u>RESULTS</u>
TOTAL SILVER	<2500 ug/Kg
TOTAL ARSENIC	10,100 ug/Kg
TOTAL BARIUM	125,000 ug/Kg
TOTAL CADMIUM	1440 ug/Kg
TOTAL CHROMIUM	19,100 ug/Kg
TOTAL MERCURY	41 ug/Kg
TOTAL LEAD	92,800 ug/Kg
TOTAL SELENIUM	<500 ug/Kg
VOA RESULT Chloromethane	< 25 ug/Kg

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<u>PARAMETERS</u>	<u>RESULTS</u>
Vinyl Chloride	< 25 ug/Kg
Bromomethane	< 25 ug/Kg
Chloroethane	< 25 ug/Kg
1,1-Dichloroethene	< 25 ug/Kg
Acetone	<100 ug/Kg
Carbon Disulfide	< 25 ug/Kg
Methylene Chloride	< 25 ug/Kg
Methyl-tertiary-butyl Ether	< 25 ug/Kg
trans-1,2-Dichloroethene	< 25 ug/Kg
1,1-Dichloroethane	< 25 ug/Kg
2-Butanone	<100 ug/Kg
cis-1,2-Dichloroethene	< 25 ug/Kg
Chloroform	< 25 ug/Kg
1,1,1-Trichloroethane	< 25 ug/Kg
Carbon Tetrachloride	< 25 ug/Kg
Benzene	< 25 ug/Kg
1,2-Dichloroethane	< 25 ug/Kg
Trichloroethene	< 25 ug/Kg
1,2-Dichloropropane	< 25 ug/Kg
Bromodichloromethane	< 25 ug/Kg
2-Hexanone	<100 ug/Kg
trans-1,3-Dichloropropene	< 25 ug/Kg
Toluene	< 25 ug/Kg
cis-1,3-Dichloropropene	< 25 ug/Kg
1,1,2-Trichloroethane	< 25 ug/Kg
4-Methyl-2-Pentanone	<100 ug/Kg
Tetrachloroethene	< 25 ug/Kg
Dibromochloromethane	< 25 ug/Kg
Chlorobenzene	< 25 ug/Kg
Ethylbenzene	< 25 ug/Kg

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<u>PARAMETERS</u>	<u>RESULTS</u>
Total Xylenes	< 25 ug/Kg
Styrene	< 25 ug/Kg
Bromoform	< 25 ug/Kg
1,1,2,2-Tetrachloroethane	< 25 ug/Kg
1,3-Dichlorobenzene	< 25 ug/Kg
1,4-Dichlorobenzene	< 25 ug/Kg
1,2-Dichlorobenzene	< 25 ug/Kg

COMMENTS: Analyzed by GC/MS at the Missouri DNR Environmental Services Program laboratory.

ACID EXTRACTABLES

Phenol	< 0.13	mg/Kg
2-Chlorophenol	< 0.13	mg/Kg
2-Methylphenol	< 0.13	mg/Kg
4-Methylphenol	< 0.13	mg/Kg
2-Nitrophenol	< 0.13	mg/Kg
2,4-Dimethylphenol	< 0.13	mg/Kg
2,4-Dichlorophenol	< 0.13	mg/Kg
4-Chloro-3-methylphenol	< 0.13	mg/Kg
2,4,6-Trichlorophenol	< 0.13	mg/Kg
2,4,5-Trichlorophenol	< 0.33	mg/Kg
2,4-Dinitrophenol	< 0.33	mg/Kg
4-Nitrophenol	< 0.33	mg/Kg
2-Methyl-4,6-dinitrophenol	< 0.33	mg/Kg
Pentachlorophenol	< 0.33	mg/Kg

COMMENTS: Analyzed by GC/MS at Missouri Department of Natural Resources Laboratory.

BASE NEUTRAL EXTRACTABLES

Acenaphthene	0.31 mg/Kg
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<u>PARAMETERS</u>	<u>RESULTS</u>
Acenaphthylene	< 0.13 mg/Kg
Anthracene	0.71 mg/Kg
Benzo(a)anthracene	1.10 mg/Kg
Benzo(a)pyrene	2.00 mg/Kg
Benzo(b)fluoranthene	1.30 mg/Kg
Benzo(ghi)perylene	1.00 mg/Kg
Benzoic acid	Not Analyzed
Benzo(k)fluoranthene	1.40 mg/Kg
Benzyl alcohol	< 0.13 mg/Kg
Bis(2-chloroethoxy)methane	< 0.13 mg/Kg
Bis(2-chloroethyl)ether	< 0.13 mg/Kg
Bis(2-chloroisopropyl)ether	< 0.13 mg/Kg
Bis(2-ethylhexyl)phthalate	Not Analyzed
4-Bromophenyl phenyl ether	< 0.13 mg/Kg
Butyl benzyl phthalate	< 0.13 mg/Kg
4-Chloroaniline	< 0.33 mg/Kg
2-Chloronaphthalene	< 0.13 mg/Kg
4-Chlorophenyl phenyl ether	< 0.13 mg/Kg
Chrysene	1.30 mg/Kg
Dibenzo(a,h)anthracene	0.47 ug/Kg
Dibenzofuran	< 0.13 mg/Kg
1,2-Dichlorobenzene	< 0.13 mg/Kg
1,3-Dichlorobenzene	< 0.13 mg/Kg
1,4-Dichlorobenzene	< 0.13 mg/Kg
3,3-Dichlorobenzidine	< 0.33 mg/Kg
Diethylphthalate	Not Analyzed
Dimethylphthalate	< 0.13 mg/Kg
Di-N-Butylphthalate	Not Analyzed
2,4-Dinitrotoluene	< 0.13 mg/Kg
2,6-Dinitrotoluene	< 0.13 mg/Kg

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PARAMETERS

Di-n-octyl phthalate  
Fluoranthene  
Fluorene  
Hexachlorobenzene  
Hexachlorobutadiene  
Hexachlorocyclopentadiene  
Hexachloroethane  
Indeno(1,2,3-cd)pyrene  
Isophorone  
2-Methylnaphthalene  
Naphthalene  
2-Nitroaniline  
3-Nitroaniline  
4-Nitroaniline  
Nitrobenzene  
N-Nitrosodi-n-propylamine  
N-Nitrosodiphenylamine  
Phenanthrene  
Pyrene  
1,2,4-Trichlorobenzene

RESULTS

< 0.13 mg/Kg  
4.00 mg/Kg  
0.23 mg.Kg  
< 0.13 mg/Kg  
< 0.13 mg/Kg  
< 0.33 mg/Kg  
< 0.13 mg/Kg  
1.40 mg/Kg  
< 0.13 mg/Kg  
< 0.13 mg/Kg  
< 0.13 mg/Kg  
< 0.33 mg/Kg  
< 0.33 mg/Kg  
< 0.33 mg/Kg  
< 0.13 mg/Kg  
< 0.13 mg/Kg  
< 0.13 mg/Kg  
2.50 mg/Kg  
3.20 mg/Kg  
< 0.13 mg/Kg

COMMENTS: Analyzed by GC/MS at Missouri  
Department of Natural Resources Laboratory.

(2) The following compounds were detected below  
quantitation limits and their estimated  
concentrations are as follows:

- (a) Naphthalene 0.050 mg/Kg  
(b) Dibenzofuran 0.128 mg/Kg

ENVIRONMENTAL SERVICES PROGRAM  
RESULT OF SAMPLE ANALYSIS

Sample No. 94-1709

Reported to: BRIAN ALLEN  
Affiliation: SPFD

Date: 8/23/94  
Project Code: 3658/3538

Sample Description:

HUBERT WHEELER STATE SCHOOL, ST. LOUIS CITY, SOIL GRAB  
(0-1' DEPTH) FROM AREA 10' WEST & 35' SOUTH OF SE CORNER  
OF BUILDING BORDERING THE GRASS PLAY AREA'S NORTH SIDE

Collected by: BRIAN ALLEN

Date: 07/07/94

Affiliation: SPFD

Remarks: ADD TCLP

<u>PARAMETERS</u>	<u>RESULTS</u>
TOTAL SILVER	<2500 ug/Kg
TOTAL ARSENIC	8680 ug/Kg
TOTAL BARIUM	96,200 ug/Kg
TOTAL CADMIUM	1050 ug/Kg
TOTAL CHROMIUM	17,600 ug/Kg
TOTAL MERCURY	49 ug/Kg
TOTAL LEAD	59,000 ug/Kg
TOTAL SELENIUM	530 ug/Kg
VOA RESULT Chloromethane	< 25 ug/Kg

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Sample no. 94-1709  
Date 8/23/94

<u>PARAMETERS</u>	<u>RESULTS</u>
Vinyl Chloride	< 25 ug/Kg
Bromomethane	< 25 ug/Kg
Chloroethane	< 25 ug/Kg
1,1-Dichloroethene	< 25 ug/Kg
Acetone	<100 ug/Kg
Carbon Disulfide	< 25 ug/Kg
Methylene Chloride	< 25 ug/Kg
Methyl-tertiary-butyl Ether	< 25 ug/Kg
trans-1,2-Dichloroethene	< 25 ug/Kg
1,1-Dichloroethane	< 25 ug/Kg
2-Butanone	<100 ug/Kg
cis-1,2-Dichloroethene	< 25 ug/Kg
Chloroform	< 25 ug/Kg
1,1,1-Trichloroethane	< 25 ug/Kg
Carbon Tetrachloride	< 25 ug/Kg
Benzene	< 25 ug/Kg
1,2-Dichloroethane	< 25 ug/Kg
Trichloroethene	< 25 ug/Kg
1,2-Dichloropropane	< 25 ug/Kg
Bromodichloromethane	< 25 ug/Kg
2-Hexanone	<100 ug/Kg
trans-1,3-Dichloropropene	< 25 ug/Kg
Toluene	< 25 ug/Kg
cis-1,3-Dichloropropene	< 25 ug/Kg
1,1,2-Trichloroethane	< 25 ug/Kg
4-Methyl-2-Pentanone	<100 ug/Kg
Tetrachloroethene	< 25 ug/Kg
Dibromochloromethane	< 25 ug/Kg
Chlorobenzene	< 25 ug/Kg
Ethylbenzene	< 25 ug/Kg

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<u>PARAMETERS</u>	<u>RESULTS</u>
Total Xylenes	< 25 ug/Kg
Styrene	< 25 ug/Kg
Bromoform	< 25 ug/Kg
1,1,2,2-Tetrachloroethane	< 25 ug/Kg
1,3-Dichlorobenzene	< 25 ug/Kg
1,4-Dichlorobenzene	< 25 ug/Kg
1,2-Dichlorobenzene	< 25 ug/Kg

COMMENTS: Analyzed by GC/MS at the Missouri DNR Environmental Services Program laboratory.

#### ACID EXTRACTABLES

Phenol	< 0.50	mg/Kg
2-Chlorophenol	< 0.50	mg/Kg
2-Methylphenol	< 0.50	mg/Kg
4-Methylphenol	< 0.50	mg/Kg
2-Nitrophenol	< 0.50	mg/Kg
2,4-Dimethylphenol	< 0.50	mg/Kg
2,4-Dichlorophenol	< 0.50	mg/Kg
4-Chloro-3-methylphenol	< 0.50	mg/Kg
2,4,6-Trichlorophenol	< 0.50	mg/Kg
2,4,5-Trichlorophenol	< 1.25	mg/Kg
2,4-Dinitrophenol	< 1.25	mg/Kg
4-Nitrophenol	< 1.25	mg/Kg
2-Methyl-4,6-dinitrophenol	< 1.25	mg/Kg
Pentachlorophenol	< 1.25	mg/Kg

COMMENTS: Analyzed by GC/MS at Missouri Department of Natural Resources Laboratory.

(1) Elevated quantitation limits due to matrix interferences.

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<u>PARAMETERS</u>	<u>RESULTS</u>
BASE NEUTRAL EXTRACTABLES	
Acenaphthene	< 0.50 mg/Kg
Acenaphthylene	< 0.50 mg/Kg
Anthracene	< 0.50 mg/Kg
Benzo(a)anthracene	< 0.50 mg/Kg
Benzo(a)pyrene	< 0.50 mg/Kg
Benzo(b)fluoranthene	< 0.50 mg/Kg
Benzo(ghi)perylene	< 0.50 mg/Kg
Benzoic acid	Not Analyzed
Benzo(k)fluoranthene	< 0.50 mg/Kg
Benzyl alcohol	< 0.50 mg/Kg
Bis(2-chloroethoxy)methane	< 0.50 mg/Kg
Bis(2-chloroethyl)ether	< 0.50 mg/Kg
Bis(2-chloroisopropyl)ether	< 0.50 mg/Kg
Bis(2-ethylhexyl)phthalate	Not Analyzed
4-Bromophenyl phenyl ether	< 0.50 mg/Kg
Butyl benzyl phthalate	< 0.50 mg/Kg
4-Chloroaniline	< 1.25 mg/Kg
2-Chloronaphthalene	< 0.50 mg/Kg
4-Chlorophenyl phenyl ether	< 0.50 mg/Kg
Chrysene	< 0.50 mg/Kg
Dibenzo(a,h)anthracene	< 0.50 mg/Kg
Dibenzofuran	< 0.50 mg/Kg
1,2-Dichlorobenzene	< 0.50 mg/Kg
1,3-Dichlorobenzene	< 0.50 mg/Kg
1,4-Dichlorobenzene	< 0.50 mg/Kg
3,3-Dichlorobenzidine	< 1.25 mg/Kg
Diethylphthalate	Not Analyzed
Dimethylphthalate	< 0.50 mg/Kg
Di-N-Butylphthalate	Not Analyzed

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Sample no. 94-1709  
Date 8/23/94

<u>PARAMETERS</u>	<u>RESULTS</u>
2,4-Dinitrotoluene	< 0.50 mg/Kg
2,6-Dinitrotoluene	< 0.50 mg/Kg
Di-n-octyl phthalate	< 0.50 mg/Kg
Fluoranthene	0.65 mg/Kg
Fluorene	< 0.50 mg/Kg
Hexachlorobenzene	< 0.50 mg/Kg
Hexachlorobutadiene	< 0.50 mg/Kg
Hexachlorocyclopentadiene	< 1.25 mg/Kg
Hexachloroethane	< 0.50 mg/Kg
Indeno(1,2,3-cd)pyrene	< 0.50 mg/Kg
Isophorone	< 0.50 mg/Kg
2-Methylnaphthalene	< 0.50 mg/Kg
Naphthalene	< 0.50 mg/Kg
2-Nitroaniline	< 1.25 mg/Kg
3-Nitroaniline	< 1.25 mg/Kg
4-Nitroaniline	< 1.25 mg/Kg
Nitrobenzene	< 0.50 mg/Kg
N-Nitrosodi-n-propylamine	< 0.50 mg/Kg
N-Nitrosodiphenylamine	< 0.50 mg/Kg
Phenanthrene	< 0.50 mg/Kg
Pyrene	0.50 mg/Kg
1,2,4-Trichlorobenzene	< 0.50 mg/Kg

COMMENTS: Analyzed by GC/MS at Missouri

Department of Natural Resources' Laboratory.

- (1) Elevated quantitation limits due to matrix interferences.
- (2) The following compounds were detected below quantitation limits and their estimated concentrations are as follows:
  - (a) Benzo(a)anthracene 0.25 mg/Kg

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PARAMETERS

(b) Chrysene  
(c) Phenanthrene

RESULTS

0.36 mg/Kg  
0.32 mg/Kg

ENVIRONMENTAL SERVICES PROGRAM  
RESULT OF SAMPLE ANALYSIS

Sample No. 94-1710

Reported to: BRIAN ALLEN  
Affiliation: SPFD

Date: 8/23/94  
Project Code: 3658/3538

Sample Description:

HUBERT WHEELER STATE SCHOOL, ST. LOUIS CITY  
SOIL GRAB (0-1' DEPTH) FROM AREA 20' NORTH OF  
NE CORNER OF SCHOOL GYM BUILDING, (BACKGROUND)

Collected by: BRIAN ALLEN  
Affiliation: SPFD  
Remarks: ADD TCLP.

Date: 07/07/94

<u>PARAMETERS</u>	<u>RESULTS</u>
TOTAL SILVER	<2500 ug/Kg
TOTAL ARSENIC	9930 ug/Kg
TOTAL BARIUM	111,000 ug/Kg
TOTAL CADMIUM	2020 ug/Kg
TOTAL CHROMIUM	20,900 ug/Kg
TOTAL MERCURY	86 ug/Kg
TOTAL LEAD	85,300 ug/Kg
TOTAL SELENIUM	2280 ug/Kg
VOA RESULT Chloromethane	< 25 ug/Kg

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Sample no. 94-1710  
Date 8/23/94

## PARAMETERS

## RESULTS

Vinyl Chloride	< 25 ug/Kg
Bromomethane	< 25 ug/Kg
Chloroethane	< 25 ug/Kg
1,1-Dichloroethene	< 25 ug/Kg
Acetone	< 100 ug/Kg
Carbon Disulfide	< 25 ug/Kg
Methylene Chloride	< 25 ug/Kg
Methyl-tertiary-butyl Ether	< 25 ug/Kg
trans-1,2-Dichloroethene	< 25 ug/Kg
1,1-Dichloroethane	< 25 ug/Kg
2-Butanone	< 100 ug/Kg
cis-1,2-Dichloroethene	< 25 ug/Kg
Chloroform	< 25 ug/Kg
1,1,1-Trichloroethane	< 25 ug/Kg
Carbon Tetrachloride	< 25 ug/Kg
Benzene	< 25 ug/Kg
1,2-Dichloroethane	< 25 ug/Kg
Trichloroethene	< 25 ug/Kg
1,2-Dichloropropane	< 25 ug/Kg
Bromodichloromethane	< 25 ug/Kg
2-Hexanone	< 100 ug/Kg
trans-1,3-Dichloropropene	< 25 ug/Kg
Toluene	< 25 ug/Kg
cis-1,3-Dichloropropene	< 25 ug/Kg
1,1,2-Trichloroethane	< 25 ug/Kg
4-Methyl-2-Pentanone	< 100 ug/Kg
Tetrachloroethene	< 25 ug/Kg
Dibromochloromethane	< 25 ug/Kg
Chlorobenzene	< 25 ug/Kg
Ethylbenzene	< 25 ug/Kg

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PARAMETERS

RESULTS

Total Xylenes	< 25	ug/Kg
Styrene	< 25	ug/Kg
Bromoform	< 25	ug/Kg
1,1,2,2-Tetrachloroethane	< 25	ug/Kg
1,3-Dichlorobenzene	< 25	ug/Kg
1,4-Dichlorobenzene	< 25	ug/Kg
1,2-Dichlorobenzene	< 25	ug/Kg

COMMENTS: Analyzed by GC/MS at the Missouri DNR Environmental Services Program laboratory.

ACID EXTRACTABLES

Phenol	< 0.10	mg/Kg
2-Chlorophenol	< 0.10	mg/Kg
2-Methylphenol	< 0.10	mg/Kg
4-Methylphenol	< 0.10	mg/Kg
2-Nitrophenol	< 0.10	mg/Kg
2,4-Dimethylphenol	< 0.10	mg/Kg
2,4-Dichlorophenol	< 0.10	mg/Kg
4-Chloro-3-methylphenol	< 0.10	mg/Kg
2,4,6-Trichlorophenol	< 0.10	mg/Kg
2,4,5-Trichlorophenol	< 0.25	mg/Kg
2,4-Dinitrophenol	< 0.25	mg/Kg
4-Nitrophenol	< 0.25	mg/Kg
2-Methyl-4,6-dinitrophenol	< 0.25	mg/Kg
Pentachlorophenol	< 0.25	mg/Kg

COMMENTS: Analyzed by GC/MS at Missouri Department of Natural Resources Laboratory.

BASE NEUTRAL EXTRACTABLES

Acenaphthene	< 0.10	mg/Kg
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Sample no. 94-1710  
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PARAMETERS

Acenaphthylene  
Anthracene  
Benzo(a)anthracene  
Benzo(a)pyrene  
Benzo(b)fluoranthene  
Benzo(ghi)perylene  
Benzoic acid  
Benzo(k)fluoranthene  
Benzyl alcohol  
Bis(2-chloroethoxy)methane  
Bis(2-chloroethyl)ether  
Bis(2-chloroisopropyl)ether  
Bis(2-ethylhexyl)phthalate  
4-Bromophenyl phenyl ether  
Butyl benzyl phthalate  
4-Chloroaniline  
2-Chloronaphthalene  
4-Chlorophenyl phenyl ether  
Chrysene  
Dibenzo(a,h)anthracene  
Dibenzofuran  
1,2-Dichlorobenzene  
1,3-Dichlorobenzene  
1,4-Dichlorobenzene  
3,3-Dichlorobenzidine  
Diethylphthalate  
Dimethylphthalate  
Di-N-Butylphthalate  
2,4-Dinitrotoluene  
2,6-Dinitrotoluene

RESULTS

< 0.10 mg/Kg  
0.13 mg/Kg  
0.57 mg/Kg  
0.56 mg/Kg  
0.53 mg/Kg  
< 0.10 mg/Kg  
Not Analyzed  
0.83 mg/Kg  
< 0.10 mg/Kg  
< 0.10 mg/Kg  
< 0.10 mg/Kg  
< 0.10 mg/Kg  
Not Analyzed  
< 0.10 mg/Kg  
< 0.10 mg/Kg  
< 0.25 mg/Kg  
< 0.10 mg/Kg  
< 0.10 mg/Kg  
0.66 mg/Kg  
< 0.10 mg/Kg  
< 0.10 mg/Kg  
< 0.10 mg/Kg  
< 0.10 mg/Kg  
< 0.25 mg/Kg  
Not Analyzed  
< 0.10 mg/Kg  
Not Analyzed  
< 0.10 mg/Kg  
< 0.10 mg/Kg

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Sample no. 94-1710  
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<u>PARAMETERS</u>	<u>RESULTS</u>
Di-n-octyl phthalate	< 0.10 mg/Kg
Fluoranthene	1.20 mg/Kg
Fluorene	< 0.10 mg/Kg
Hexachlorobenzene	< 0.10 mg/Kg
Hexachlorobutadiene	< 0.10 mg/Kg
Hexachlorocyclopentadiene	< 0.25 mg/Kg
Hexachloroethane	< 0.10 mg/Kg
Indeno(1,2,3-cd)pyrene	< 0.10 mg/Kg
Isophorone	< 0.10 mg/Kg
2-Methylnaphthalene	< 0.10 mg/Kg
Naphthalene	< 0.10 mg/Kg
2-Nitroaniline	< 0.25 mg/Kg
3-Nitroaniline	< 0.25 mg/Kg
4-Nitroaniline	< 0.25 mg/Kg
Nitrobenzene	< 0.10 mg/Kg
N-Nitrosodi-n-propylamine	< 0.10 mg/Kg
N-Nitrosodiphenylamine	< 0.10 mg/Kg
Phenanthrene	0.50 mg/Kg
Pyrene	1.20 mg/Kg
1,2,4-Trichlorobenzene	< 0.10 mg/Kg

- COMMENTS: Analyzed by GC/MS at Missouri  
Department of Natural Resources Laboratory.  
(1) The following compounds were detected below  
quantitation limits and their estimated  
concentrations are as follows:
- (a) Acenaphthylene 0.046 mg/Kg
  - (b) Acenaphthene 0.037 mg/Kg
  - (c) Dibenzofuran 0.019 mg/Kg
  - (d) Fluorene 0.030 mg/Kg

ENVIRONMENTAL SERVICES PROGRAM  
RESULT OF SAMPLE ANALYSIS

Sample No. 94-1711

Reported to: BRIAN ALLEN  
Affiliation: SPFD

Date: 8/23/94  
Project Code: 3658/3538

Sample Description:

HUBERT WHEELER STATE SCHOOL, ST. LOUIS CITY  
GRAB OF BLACK TAR-LIKE MATERIAL COLLECTED FROM  
GROUND SURFACE NEAR WHERE MATERIAL OOZES OUT OF GROUND

Collected by: BRIAN ALLEN  
Affiliation: SPFD  
Remarks: ADD TCLP

Date: 07/07/94

<u>PARAMETERS</u>	<u>RESULTS</u>
TOTAL SILVER	<2500 ug/Kg
TOTAL ARSENIC	3010 ug/Kg
TOTAL BARIUM	<10,000 ug/Kg
TOTAL CADMIUM	1250 ug/Kg
TOTAL CHROMIUM	<2500 ug/Kg
TOTAL MERCURY	<25 ug/Kg
TOTAL LEAD	42,700 ug/Kg
TOTAL SELENIUM	1993 ug/Kg
VOA RESULT Chloromethane	< 25 ug/L

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<u>PARAMETERS</u>	<u>RESULTS</u>
Vinyl Chloride	< 25 ug/L
Bromomethane	< 25 ug/L
Chloroethane	< 25 ug/L
1,1-Dichloroethene	< 25 ug/L
Acetone	<100 ug/L
Carbon Disulfide	< 25 ug/L
Methylene Chloride	< 25 ug/L
Methyl-tertiary-butyl Ether	< 25 ug/L
trans-1,2-Dichloroethene	< 25 ug/L
1,1-Dichloroethane	< 25 ug/L
2-Butanone	<100 ug/L
cis-1,2-Dichloroethene	< 25 ug/L
Chloroform	< 25 ug/L
1,1,1-Trichloroethane	< 25 ug/L
Carbon Tetrachloride	< 25 ug/L
Benzene	< 25 ug/L
1,2-Dichloroethane	< 25 ug/L
Trichloroethene	< 25 ug/L
1,2-Dichloropropane	< 25 ug/L
Bromodichloromethane	< 25 ug/L
2-Hexanone	<100 ug/L
trans-1,3-Dichloropropene	< 25 ug/L
Toluene	< 25 ug/L
cis-1,3-Dichloropropene	< 25 ug/L
1,1,2-Trichloroethane	< 25 ug/L
4-Methyl-2-Pentanone	<100 ug/L
Tetrachloroethene	< 25 ug/L
Dibromochloromethane	< 25 ug/L
Chlorobenzene	< 25 ug/L
Ethylbenzene	< 25 ug/L

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PARAMETERS                           RESULTS

Total Xylenes	< 25	ug/L
Styrene	< 25	ug/L
Bromoform	< 25	ug/L
1,1,2,2-Tetrachloroethane	< 25	ug/L
1,3-Dichlorobenzene	< 25	ug/L
1,4-Dichlorobenzene	< 25	ug/L
1,2-Dichlorobenzene	< 25	ug/L

COMMENTS: Analyzed by GC/MS at the Missouri DNR Environmental Services Program laboratory.

ACID EXTRACTABLES

Phenol	< 400	mg/Kg
2-Chlorophenol	< 400	mg/Kg
2-Methylphenol	< 400	mg/Kg
4-Methylphenol	< 400	mg/Kg
2-Nitrophenol	< 400	mg/Kg
2,4-Dimethylphenol	< 400	mg/Kg
2,4-Dichlorophénol	< 400	mg/Kg
4-Chloro-3-methylphenol	< 400	mg/Kg
2,4,6-Trichlorophenol	< 400	mg/Kg
2,4,5-Trichlorophenol	< 1000	mg/Kg
2,4-Dinitrophenol	< 1000	mg/Kg
4-Nitrophenol	< 1000	mg/Kg
2-Methyl-4,6-dinitrophenol	< 1000	mg/Kg
Pentachlorophenol	< 1000	mg/Kg

COMMENTS: Analyzed by GC/MS at Missouri

Department of Natural Resources Laboratory.

(1) Elevated quantitation limits due to matrix  
interferences.

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<u>PARAMETERS</u>	<u>RESULTS</u>
BASE NEUTRAL EXTRACTABLES	
Acenaphthene	7200 mg/Kg
Acenaphthylene	< 400 mg/Kg
Anthracene	14000 mg/Kg
Benzo(a)anthracene	14000 mg/Kg
Benzo(a)pyrene	32000 mg/Kg
Benzo(b)fluoranthene	22000 mg/Kg
Benzo(ghi)perylene	1200 mg/Kg
Benzoic acid	Not Analyzed
Benzo(k)fluoranthene	22000 mg/Kg
Benzyl alcohol	< 400 mg/Kg
Bis(2-chloroethoxy)methane	< 400 mg/Kg
Bis(2-chloroethyl)ether	< 400 mg/Kg
Bis(2-chloroisopropyl)ether	< 400 mg/Kg
Bis(2-ethylhexyl)phthalate	Not Analyzed
4-Bromophenyl phenyl ether	< 400 mg/Kg
Butyl benzyl phthalate	< 400 mg/Kg
4-Chloroaniline	< 1000 mg/Kg
2-Chloronaphthalene	< 400 mg/Kg
4-Chlorophenyl phenyl ether	< 400 mg/Kg
Chrysene	17000 mg/Kg
Dibenzo(a,h)anthracene	11000 mg/Kg
Dibenzofuran	4200 mg/Kg
1,2-Dichlorobenzene	< 400 mg/Kg
1,3-Dichlorobenzene	< 400 mg/Kg
1,4-Dichlorobenzene	< 400 mg/Kg
3,3-Dichlorobenzidine	< 1000 mg/Kg
Diethylphthalate	Not Analyzed
Dimethylphthalate	< 400 mg/Kg
Di-N-Butylphthalate	Not Analyzed

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Sample no. 94-1711  
Date 8/23/94

<u>PARAMETERS</u>	<u>RESULTS</u>
2,4-Dinitrotoluene	< 400 mg/Kg
2,6-Dinitrotoluene	< 400 mg/Kg
Di-n-octyl phthalate	< 400 mg/Kg
Fluoranthene	47000 mg/Kg
Fluorene	7300 mg/Kg
Hexachlorobenzene	< 400 mg/Kg
Hexachlorobutadiene	< 400 mg/Kg
Hexachlorocyclopentadiene	< 1000 mg/Kg
Hexachloroethane	< 400 mg/Kg
Indeno(1,2,3-cd)pyrene	20000 mg/Kg
Isophorone	< 400 mg/Kg
2-Methylnaphthalene	1000 mg/Kg
Naphthalene	1800 mg/Kg
2-Nitroaniline	< 1000 mg/Kg
3-Nitroaniline	< 1000 mg/Kg
4-Nitroaniline	< 1000 mg/Kg
Nitrobenzene	< 400 mg/Kg
N-Nitrosodi-n-propylamine	< 400 mg/Kg
N-Nitrosodiphenylamine	< 400 mg/Kg
Phenanthrene	28000 mg/Kg
Pyrene	28000 mg/Kg
1,2,4-Trichlorobenzene	< 400 mg/Kg

COMMENTS: Analyzed by GC/MS at Missouri  
Department of Natural Resources Laboratory.  
(1) Elevated quantitation limits due to matrix  
interferences.